



## SEQUENCE LISTING

<110> Buck, Linda B  
Axel, Richard

<120> Odorant Receptors and Uses Thereof

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<140> US 09/771,209

<141> 2001-01-26

<150> US 08/129,079

<151> 1993-10-05

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<221> MISC\_FEATURE  
<222> (165)..(165)  
<223> x = unknown

<400> 14

Ile Cys Phe Thr Ser Ala Ser Ile Pro Lys Met Leu Val Asn Ile Gln  
1 5 10 15

Thr Lys Asn Lys Val Ile Thr Tyr Glu Gly Cys Ile Ser Gln Val Tyr  
20 25 30

Phe Ser Tyr Ser Leu Glu Phe Trp Thr Thr Phe Phe Ser Thr Val Met  
35 40 45

Ala Tyr Asp Arg Tyr Val Ala Ile Cys His Pro Ser Xaa Tyr Thr Gly  
50 55 60

His His Glu Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa  
65 70 75 80

Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa  
85 90 95

Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa  
100 105 110

Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa  
115 120 125

Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Tyr Ser Tyr Ser  
130 135 140

Lys Ile Val Ser Ser Ile Arg Glu Ile Ala Glu Ile Ser Ser Ser Gln  
145 150 155 160

Gly Lys Tyr Lys Xaa Phe Ser Thr Cys Ala Ser His Leu Ser Val Val  
 165 170 175

Ser Leu Phe Tyr Ser Thr Leu Leu Gly Val Tyr Leu Ser Ser Ser Phe  
 180 185 190

Thr Gln Asn Ser His Ser Thr Ala Arg Ala Ser Val Met Tyr Ser Val  
 195 200 205

Val Thr Pro Met Leu  
 210

<210> 15  
 <211> 636  
 <212> DNA  
 <213> Rattus sp.

<400> 15  
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 ctcttggtctg tgatggccta tgatcgatat gtggctatct gtcacccact gtattacaca 180  
 gtcattgtga accaccgact ctgtatcctg ctgcttctgc tgtcctgggt tgtcagcatt 240  
 ttacatgcct tcttacagag ctttaattgta ctacagttga ccttctgtgg agatgtgaaa 300  
 atccctcact tcttctgtga gctcaatcag ctgtcccaac tcacatgttc agacaacttt 360  
 ccaagtcacc tcacaatgca tcttgtacct gttatatttg cagctatttc cctcagtggt 420  
 atcctttact cttatttcaa gatagtgtct tccatacgtt ctatgtcctc agttcaaggg 480  
 aagtacaagg cattttctac atgtgcctct cacctttcca ttgtctcctt attttatagt 540  
 acaggcctcg ggggtgtacgt cagttctgct gtgatccgaa gctcacactc ctctgcaagt 600  
 gcttcgggtca tgtatactgt ggtcaccccc atgttg 636

<210> 16  
 <211> 212  
 <212> PRT  
 <213> Rattus sp.

<400> 16

Thr Ser Thr Thr Ile Pro Lys Met Leu Val Asn Ile His Thr Gln Ser  
 1 5 10 15

Asn Thr Ile Thr Tyr Glu Asp Cys Ile Ser Gln Met Phe Val Leu Leu  
20 25 30

Val Phe Gly Glu Leu Asp Asn Phe Leu Leu Ala Val Met Ala Tyr Asp  
35 40 45

Arg Tyr Val Ala Ile Cys His Pro Leu Tyr Tyr Thr Val Ile Val Asn  
50 55 60

His Arg Leu Cys Ile Leu Leu Leu Leu Leu Ser Trp Val Val Ser Ile  
65 70 75 80

Leu His Ala Phe Leu Gln Ser Leu Ile Val Leu Gln Leu Thr Phe Cys  
85 90 95

Gly Asp Val Lys Ile Pro His Phe Phe Cys Glu Leu Asn Gln Leu Ser  
100 105 110

Gln Leu Thr Cys Ser Asp Asn Phe Pro Ser His Leu Thr Met His Leu  
115 120 125

Val Pro Val Ile Phe Ala Ala Ile Ser Leu Ser Gly Ile Leu Tyr Ser  
130 135 140

Tyr Phe Lys Ile Val Ser Ser Ile Arg Ser Met Ser Ser Val Gln Gly  
145 150 155 160

Lys Tyr Lys Ala Phe Ser Thr Cys Ala Ser His Leu Ser Ile Val Ser  
165 170 175

Leu Phe Tyr Ser Thr Gly Leu Gly Val Tyr Val Ser Ser Ala Val Ile  
180 185 190

Arg Ser Ser His Ser Ser Ala Ser Ala Ser Val Met Tyr Thr Val Val  
195 200 205

Thr Pro Met Leu  
210

<210> 17  
<211> 646  
<212> DNA  
<213> Rattus sp.

<400> 17  
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taccatctca taccttggat gttctataca gtttggctca gctgctttgt ttggaggctct 120  
tgaatgcttc cttctggctg ccatggcgta tgategtttt gtagcaatct gcaaccact 180  
gctttattca acgaaaatgt ccacacaagt ctgtgtccag ttggttgtgg gatcttatat 240  
agggggattt cttaatgcct cctcttttac cctttccttt ttttccttgt ccttctgtgg 300  
accaaataga atcaatcact tttactgtga ttttgcctcg ttagtagaac tttcttgctc 360  
tgatgtcagt gttcctgatg ctgttacctc atttcttctg gcctcagtta ctatgctcac 420  
agtgtttatc atagccatct cctataccta tatectcacc accatcctga agatgcgttc 480  
cactgagggt cgacagaaag cattctctac ctgcacttcc cacctcactg cagtcaactc 540  
gtgctatgga accatcacat tcattctatgt gatgcccaag tccagctact ccacagacca 600  
gaacaagggt gtgtctgtgt tttatatggt ggtgatcccc atgttg 646

<210> 18  
<211> 215  
<212> PRT  
<213> Rattus sp.

<400> 18

Ile Gly Tyr Ser Ser Ser Val Thr Pro Asn Met Leu Val Asn Phe Leu  
1 5 10 15

Ile Lys Gln Asn Thr Ile Ser Tyr Leu Gly Cys Ser Ile Gln Phe Gly  
20 25 30

Ser Ala Ala Leu Pro Gly Gly Leu Glu Cys Phe Leu Leu Ala Ala Met  
35 40 45

Ala Tyr Asp Arg Phe Val Ala Ile Cys Asn Pro Leu Leu Tyr Ser Thr  
50 55 60

Lys Met Ser Thr Gln Val Cys Val Gln Leu Val Val Gly Ser Tyr Ile  
65 70 75 80

Gly Gly Phe Leu Asn Ala Ser Ser Phe Thr Leu Ser Phe Phe Ser Leu  
85 90 95

Ser Phe Cys Gly Pro Asn Arg Ile Asn His Phe Tyr Cys Asp Phe Ala

100	105	110
Pro Leu Val Glu Leu Ser Cys Ser Asp Val Ser Val Pro Asp Ala Val		
115	120	125
Thr Ser Phe Ser Ala Ala Ser Val Thr Met Leu Thr Val Phe Ile Ile		
130	135	140
Ala Ile Ser Tyr Thr Tyr Ile Leu Ile Thr Ile Leu Lys Met Arg Ser		
145	150	155
Thr Glu Gly Arg Gln Lys Ala Phe Ser Thr Cys Thr Ser His Leu Thr		
	165	170
		175
Ala Val Thr Leu Cys Tyr Gly Thr Ile Thr Phe Ile Tyr Val Met Pro		
	180	185
		190
Lys Ser Ser Tyr Ser Thr Asp Gln Asn Lys Val Val Ser Val Phe Tyr		
	195	200
		205
Met Val Val Ile Pro Met Leu		
210	215	

<210> 19  
 <211> 481  
 <212> DNA  
 <213> Rattus sp.

<400> 19  
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 gctggagttc tgtgactcca atgtgattga tcattttggc tgtgatgcct ctccaattct 180  
 gcagataacc tgctcagaca cggtatttat agagaaaatt gtcttggtt ttgccatact 240  
 gacactcatc attactctgg tatgtgttgt tctctctac acatacatca tcaagaccat 300  
 tttaaagttt ccttctgctc aacaaagaaa aaaggccttt tctacatgtt cttcccat 360  
 gattgtgggt tccatcacct atgggagctg tattttcacc tacatcaaac cttcagcgaa 420  
 ggaaggggta gccatcaata aggttgatc tgtgtcaca acatcagtcg cccctttgct 480  
 c 481

<210> 20

<211> 160  
<212> PRT  
<213> Rattus sp.

<400> 20

Ile Cys Lys Pro Leu His Tyr Thr Thr Ile Met Asn Asn Arg Val Cys  
1 5 10 15

Thr Val Leu Val Leu Ser Cys Trp Phe Ala Gly Leu Leu Ile Ile Leu  
20 25 30

Pro Pro Leu Gly His Gly Leu Gln Leu Glu Phe Cys Asp Ser Asn Val  
35 40 45

Ile Asp His Phe Gly Cys Asp Ala Ser Pro Ile Leu Gln Ile Thr Cys  
50 55 60

Ser Asp Thr Val Phe Ile Glu Lys Ile Val Leu Ala Phe Ala Ile Leu  
65 70 75 80

Thr Leu Ile Ile Thr Leu Val Cys Val Val Leu Ser Tyr Thr Tyr Ile  
85 90 95

Ile Lys Thr Ile Leu Lys Phe Pro Ser Ala Gln Gln Arg Lys Lys Ala  
100 105 110

Phe Ser Thr Cys Ser Ser His Met Ile Val Val Ser Ile Thr Tyr Gly  
115 120 125

Ser Cys Ile Phe Ile Tyr Ile Lys Pro Ser Ala Lys Glu Gly Val Ala  
130 135 140

Ile Asn Lys Val Val Ser Val Leu Thr Thr Ser Val Ala Pro Leu Leu  
145 150 155 160

<210> 21  
<211> 481  
<212> DNA  
<213> Rattus sp.

<220>  
<221> misc\_feature  
<222> (270)..(274)  
<223> n = unknown



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<400> 21
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gttggaattc tgtgggcca accgcatcaa ccatttcttc tgtgacctcc ctccattaat      180
ccagctgtcc tgctccagcg tctttgtgac agaaatggcc atctttgtcc tgtccatcgc      240
tgtgctctgc atctgtttcc tctaaccn nnnntcctac attttcatag tgtcctccat      300
tctgagaatc ccttccacta ccggcaggat gaagacattt tctacatgtg gctcccacct      360
ggccgtggtc accatctact atgggacctat gatctccatg tatgtcggcc caaatgcgca      420
tctgtccccg gagtcaaca aggtcatttc tgtcttctac actgtgatca cccactact      480
g                                                                           481

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<210> 22
<211> 160
<212> PRT
<213> Rattus sp.

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<220>
<221> MISC_FEATURE
<222> (90)..(91)
<223> x = unknown

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<400> 22

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Ile Cys His Pro Leu His Tyr Ser Leu Leu Met Ser Pro Asp Asn Cys
1           5           10           15

```

```

Ala Ala Leu Val Thr Val Ser Trp Val Thr Gly Val Gly Thr Gly Phe
20           25           30

```

```

Leu Pro Ser Leu Leu Ile Ser Lys Leu Asp Phe Cys Gly Pro Asn Arg
35           40           45

```

```

Ile Asn His Phe Phe Cys Asp Leu Pro Pro Leu Ile Gln Leu Ser Cys
50           55           60

```

```

Ser Ser Val Phe Val Thr Glu Met Ala Ile Phe Val Leu Ser Ile Ala
65           70           75           80

```

```

Val Leu Cys Ile Cys Phe Leu Leu Thr Xaa Xaa Ser Tyr Ile Phe Ile
85           90           95

```

Val Ser Ser Ile Leu Arg Ile Pro Ser Thr Thr Gly Arg Met Lys Thr  
100 105 110

Phe Ser Thr Cys Gly Ser His Leu Ala Val Val Thr Ile Tyr Tyr Gly  
115 120 125

Thr Met Ile Ser Met Tyr Val Gly Pro Asn Ala His Leu Ser Pro Glu  
130 135 140

Leu Asn Lys Val Ile Ser Val Phe Tyr Thr Val Ile Thr Pro Leu Leu  
145 150 155 160

<210> 23  
<211> 646  
<212> DNA  
<213> Rattus sp.

<220>  
<221> misc\_feature  
<222> (1)..(1)  
<223> n = unknown

<220>  
<221> misc\_feature  
<222> (236)..(402)  
<223> n = unknown

<400> 23  
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ggccatttcc ttctctgggt gtctaactca gctgtatttt ctctgtgtgt ctgtgaatat 120  
ggacaatttc ctgctggctg tgatggccta tgacagattt gtggccatat gccacccttt 180  
gtactacaca acaaagatga cccaccagct ctgtgtcttg ctgggtgtctg gatcannnnn 240  
nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn 300  
nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn 360  
nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nntgtgatca tggtcacccc 420  
atttgtctgc atcctcatct cttacatcta catcaccaat gcagtcctca gagtctcatc 480  
ctttagggga ggatggaaag ccttctccac ctgtggctca cacctggctg tggctctgct 540  
cttctatggc accatcattg ctgtgtattt caatcctgta tcttcccatt catctgagaa 600  
ggacactgca gcaactgtgc tatacacagt ggtgactccc atgttg 646

<210> 24  
<211> 215  
<212> PRT  
<213> Rattus sp.

<220>  
<221> MISC\_FEATURE  
<222> (79)..(134)  
<223> x = unknown

<400> 24

Val Cys Phe Ser Ser Thr Thr Val Pro Lys Val Leu Ala Asn His Ile  
1 5 10 15

Leu Ser Ser Gln Ala Ile Ser Phe Ser Gly Cys Leu Thr Gln Leu Tyr  
20 25 30

Phe Leu Cys Val Ser Val Asn Met Asp Asn Phe Leu Leu Ala Val Met  
35 40 45

Ala Tyr Asp Arg Phe Val Ala Ile Cys His Pro Leu Tyr Tyr Thr Thr  
50 55 60

Lys Met Thr His Gln Leu Cys Val Leu Leu Val Ser Gly Ser Xaa Xaa  
65 70 75 80

Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa  
85 90 95

Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa  
100 105 110

Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa  
115 120 125

Xaa Xaa Xaa Xaa Xaa Xaa Val Ile Met Val Thr Pro Phe Val Cys Ile  
130 135 140

Leu Ile Ser Tyr Ile Tyr Ile Thr Asn Ala Val Leu Arg Val Ser Ser  
145 150 155 160

Phe Arg Gly Gly Trp Lys Ala Phe Ser Thr Cys Gly Ser His Leu Ala  
165 170 175

Val Val Cys Leu Phe Tyr Gly Thr Ile Ile Ala Val Tyr Phe Asn Pro  
180 185 190

Val Ser Ser His Ser Ser Glu Lys Asp Thr Ala Ala Thr Val Leu Tyr  
195 200 205

Thr Val Val Thr Pro Met Leu  
210 215

<210> 25  
<211> 646  
<212> DNA  
<213> Rattus sp.

<220>  
<221> misc\_feature  
<222> (236)..(402)  
<223> n = unknown

<400> 25  
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ggccatttcc ttctctgggt gtctaactca gctgtatttt ctctgtgtgt ctgtgaatat 120  
ggacaatttc ctgctggctg tgatggccta tgacagattt gtggccatat gccacccttt 180  
gtactacaca acaccgatga cccaccagct ctgtgtcttg ctggtgtctg gatcannnnn 240  
nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn 300  
nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn 360  
nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nntgtgatca tggtcacccc 420  
atttgtctgc atcctcatct cttacatcta catcaccaat gcagtcctca gagtctcatc 480  
ctttagggga ggatggaaag ccttctccac ctgtggctca cacctggctg tggctctgcct 540  
cttctatggc accatcattg ctgtgtattt caatcctgta tcttcccatt catctgagaa 600  
ggacactgca gcaactgtgc tatacacagt ggtgactccc atgttg 646

<210> 26  
<211> 215  
<212> PRT  
<213> Rattus sp.

<220>  
<221> MISC\_FEATURE  
<222> (79)..(134)  
<223> x = unknown

<400> 26

Val Cys Phe Ser Ser Thr Thr Val Pro Lys Val Leu Ala Asn His Ile  
1 5 10 15

Leu Ser Ser Gln Ala Ile Ser Phe Ser Gly Cys Leu Thr Gln Leu Tyr  
20 25 30

Phe Leu Cys Val Ser Val Asn Met Asp Asn Phe Leu Leu Ala Val Met  
35 40 45

Ala Tyr Asp Arg Phe Val Ala Ile Cys His Pro Leu Tyr Tyr Thr Thr  
50 55 60

Pro Met Thr His Gln Leu Cys Val Leu Leu Val Ser Gly Ser Xaa Xaa  
65 70 75 80

Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa  
85 90 95

Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa  
100 105 110

Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa  
115 120 125

Xaa Xaa Xaa Xaa Xaa Xaa Val Ile Met Val Thr Pro Phe Val Cys Ile  
130 135 140

Leu Ile Ser Tyr Ile Tyr Ile Thr Asn Ala Val Leu Arg Val Ser Ser  
145 150 155 160

Phe Arg Gly Gly Trp Lys Ala Phe Ser Thr Cys Gly Ser His Leu Ala  
165 170 175

Val Val Cys Leu Phe Tyr Gly Thr Ile Ile Ala Val Tyr Phe Asn Pro  
180 185 190

Val Ser Ser His Ser Ser Glu Lys Asp Thr Ala Ala Thr Val Leu Tyr  
195 200 205

Thr Val Val Thr Pro Met Leu  
210 215

<210> 27  
 <211> 481  
 <212> DNA  
 <213> Rattus sp.

<220>  
 <221> misc\_feature  
 <222> (183)..(185)  
 <223> n = unknown

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 gttcccttac tgtggatcac ggaagatctc ccacttcttc tgtgaggtgc cctcgctgct 180  
 gannntggcc tgtgcagaca ctgaagccta tgagcaggtta ctatttgtga caggcgtggt 240  
 ggtcctcctg gtgcccatta cattcattac tgcctcttat gccctcatcc tggctgctgt 300  
 gctccgaatg cactctgcgg aggggagtca gaaggcccta gccacatgct cctctcacct 360  
 gacagtcgtc aatctcttct atgggccctt tgtctacacc tacatgttac ctgcttctta 420  
 tcactcacca ggccaagacg acatagtatc cgtcttttac accgttctca caccatgct 480  
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<210> 28  
 <211> 160  
 <212> PRT  
 <213> Rattus sp.

<220>  
 <221> MISC\_FEATURE  
 <222> (61)..(62)  
 <223> x = unknown

<400> 28  
 Ile Cys Asn Pro Leu Arg Tyr Pro Val Leu Met Ser Gly Arg Val Cys  
 1 5 10 15  
 Leu Leu Met Val Val Ala Ser Trp Leu Gly Gly Ser Leu Asn Ala Ser  
 20 25 30  
 Ile Gln Thr Ser Leu Thr Leu Gln Phe Pro Tyr Cys Gly Ser Arg Lys  
 35 40 45

Ile Ser His Phe Phe Cys Glu Val Pro Ser Leu Leu Xaa Xaa Ala Cys  
 50 55 60

Ala Asp Thr Glu Ala Tyr Glu Gln Val Leu Phe Val Thr Gly Val Val  
 65 70 75 80

Val Leu Leu Val Pro Ile Thr Phe Ile Thr Ala Ser Tyr Ala Leu Ile  
 85 90 95

Leu Ala Ala Val Leu Arg Met His Ser Ala Glu Gly Ser Gln Lys Ala  
 100 105 110

Leu Ala Thr Cys Ser Ser His Leu Thr Val Val Asn Leu Phe Tyr Gly  
 115 120 125

Pro Leu Val Tyr Thr Tyr Met Leu Pro Ala Cys Tyr His Ser Pro Gly  
 130 135 140

Gln Asp Asp Ile Val Ser Val Phe Tyr Thr Val Leu Thr Pro Met Leu  
 145 150 155 160

<210> 29  
 <211> 481  
 <212> DNA  
 <213> Rattus sp.

<400> 29  
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 tctccttttt tgtggcccca atcacattca acacatcttt tgtgatttcc cacctgtgct 180  
 gagcttggtt tgtactgata catcagtga tgccttggtg gattttatta taaacctctg 240  
 caagatcctg gccaccttcc tgctgaccc gagctcctac ttgcagataa tccgcacagt 300  
 gctcaagatt ccttcagctg caggcaagaa gaaagcattc tcgacttggt cctcccatct 360  
 cactgtgggt ctcattcttct atgggagcat ccttttcatg tatgtgcggc tgaagaagac 420  
 ttactccctt gactacgaca gagccttggc agtagtctac tccgtgggta cccctttcct 480  
 g 481

<210> 30  
 <211> 160  
 <212> PRT

<213> Rattus sp.

<400> 30

Ile Cys Arg Pro Leu His Tyr Pro Thr Leu Met Thr Gln Thr Leu Cys  
1 5 10 15

Ala Lys Ile Ala Thr Gly Cys Trp Leu Gly Gly Leu Ala Gly Pro Val  
20 25 30

Val Glu Ile Ser Leu Val Ser Arg Leu Leu Phe Cys Gly Pro Asn His  
35 40 45

Ile Gln His Ile Phe Cys Asp Phe Pro Pro Val Leu Ser Leu Ala Cys  
50 55 60

Thr Asp Thr Ser Val Asn Val Leu Val Asp Phe Ile Ile Asn Leu Cys  
65 70 75 80

Lys Ile Leu Ala Thr Phe Leu Leu Ile Leu Ser Ser Tyr Leu Gln Ile  
85 90 95

Ile Arg Thr Val Leu Lys Ile Pro Ser Ala Ala Gly Lys Lys Lys Ala  
100 105 110

Phe Ser Thr Cys Ala Ser His Leu Thr Val Val Leu Ile Phe Tyr Gly  
115 120 125

Ser Ile Leu Phe Met Tyr Val Arg Leu Lys Lys Thr Tyr Ser Leu Asp  
130 135 140

Tyr Asp Arg Ala Leu Ala Val Val Tyr Ser Val Val Thr Pro Phe Leu  
145 150 155 160

<210> 31

<211> 481

<212> DNA

<213> Rattus sp.

<220>

<221> misc\_feature

<222> (178)..(179)

<223> n = unknown

<400> 31

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60



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ttttctcttc tgtgggccaa ataatgttga tcattttttc tgtgattttg ctcttttnnt 180
ggaactttcg tgctctgatg tgagtgtctc tgtagttgtt atgtcatttt ctgctggctc 240
agttactatg atcacagtgt ttatcatagc catctcctat tcttacatcc tcatcaccat 300
cctgaagatg tcttcaactg agggccgtca caaggctttc tccacatgta cctcccacct 360
cactgcagtc actctctact atggcaccat taccttcatt tatgtgatgc ccaagtccac 420
atactctaca gaccagaaca aggtggtgtc tgtgttttac atggtggtga tcccaatggt 480
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<210> 32
<211> 160
<212> PRT
<213> Rattus sp.

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<220>
<221> MISC_FEATURE
<222> (59)..(60)
<223> x = unknown

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<400> 32

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Ile Cys Asn Pro Leu Leu Tyr Ser Thr Lys Met Ser Thr Gln Val Cys
1           5           10           15

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Ile Gln Leu Val Ala Gly Ser Tyr Ile Gly Gly Phe Leu Asn Thr Cys
20           25           30

```

```

Leu Ile Met Phe Tyr Phe Phe Ser Phe Leu Phe Cys Gly Pro Asn Ile
35           40           45

```

```

Val Asp His Phe Phe Cys Asp Phe Ala Pro Xaa Xaa Glu Leu Ser Cys
50           55           60

```

```

Ser Asp Val Ser Val Ser Val Val Val Met Ser Phe Ser Ala Gly Ser
65           70           75           80

```

```

Val Thr Met Ile Thr Val Phe Ile Ile Ala Ile Ser Tyr Ser Tyr Ile
85           90           95

```

```

Leu Ile Thr Ile Leu Lys Met Ser Ser Thr Glu Gly Arg His Lys Ala
100          105          110

```

Phe Ser Thr Cys Thr Ser His Leu Thr Ala Val Thr Leu Tyr Tyr Gly  
 115 120 125

Thr Ile Thr Phe Ile Tyr Val Met Pro Lys Ser Thr Tyr Ser Thr Asp  
 130 135 140

Gln Asn Lys Val Val Ser Val Phe Tyr Met Val Val Ile Pro Met Leu  
 145 150 155 160

<210> 33  
 <211> 479  
 <212> DNA  
 <213> Rattus sp.

<400> 33  
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 actgactttc agcacaaaaa ctgaaatccc tcactttttc tgtgagctgg ctcatatcat 180  
 caaacttacc tgttccgata attttatcaa ctatctgctg atatacacag agtctgtctt 240  
 attttttggg gttcatattg tagggatcat tttgtcttat atttacctg tatcctcagt 300  
 ttttaagaatg tcattattgg gaggaatgta taaagccttt tcaacatgtg gatctcattt 360  
 gtcggttgtc tctgttttat ggcacagggt ttgggggtaca cataagctct ccacttactg 420  
 actctccaag gaagactgta gtggcttcag tgatgtacac tgtggttact cagatgctg 479

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<400> 34

Ile Cys His Pro Leu Lys Tyr Thr Val Ile Met Asn His Tyr Phe Cys  
 1 5 10 15

Val Met Leu Leu Leu Phe Ser Val Phe Val Ser Ile Ala His Ala Leu  
 20 25 30

Phe His Ile Leu Met Val Leu Ile Leu Thr Phe Ser Thr Lys Thr Glu  
 35 40 45

Ile Pro His Phe Phe Cys Glu Leu Ala His Ile Ile Lys Leu Thr Cys

50

55

60

Ser Asp Asn Phe Ile Asn Tyr Leu Leu Ile Tyr Thr Glu Ser Val Leu  
65 70 75 80

Phe Phe Gly Val His Ile Val Gly Ile Ile Leu Ser Tyr Ile Tyr Thr  
85 90 95

Val Ser Ser Val Leu Arg Met Ser Leu Leu Gly Gly Met Tyr Lys Ala  
100 105 110

Phe Ser Thr Cys Gly Ser His Leu Ser Val Val Ser Val Leu Trp His  
115 120 125

Arg Phe Trp Gly Thr His Lys Leu Ser Thr Tyr  
130 135

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cccactctgt ggtccttacg tcgttgatta tcttttctgc gagctgccca tccttctgca 180  
cctgttctgc acagatacat ctctgctgga gnnnnnnnnn nnnnnnnnnn nnnnnnnnnn 240  
nnnnnnnnnn nnncccttc tcttgattgt tctctctac cttcgcatcc tgggtggctgt 300  
gataagaata gactcagctg agggcagaaa aaaggccttt tcaacttggtg cttcacactt 360  
ggctgtggtg accatctact atggaacagg gctgatcagg tacttgaggc ccaagtcct 420  
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g 481

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<220>

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1 5 10 15

Thr Ala Leu Ser Val Ala Ile Trp Val Ile Gly Phe Cys Ala Ser Val  
20 25 30

Ile Pro Leu Cys Phe Thr Ile Leu Pro Leu Cys Gly Pro Tyr Val Val  
35 40 45

Asp Tyr Leu Phe Cys Glu Leu Pro Ile Leu Leu His Leu Phe Cys Thr  
50 55 60

Asp Thr Ser Leu Leu Glu Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa  
65 70 75 80

Xaa Xaa Xaa Xaa Pro Phe Leu Leu Ile Val Leu Ser Tyr Leu Arg Ile  
85 90 95

Leu Val Ala Val Ile Arg Ile Asp Ser Ala Glu Gly Arg Lys Lys Ala  
100 105 110

Phe Ser Thr Cys Ala Ser His Leu Ala Val Val Thr Ile Tyr Tyr Gly  
115 120 125

Thr Gly Leu Ile Arg Tyr Leu Arg Pro Lys Ser Leu Tyr Ser Ala Glu  
130 135 140

Gly Asp Arg Leu Ile Ser Val Phe Tyr Ala Val Ile Gly Pro Ala Leu  
145 150 155 160

<210> 37

<211> 35

<212> DNA

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<220>

<223> Primer directed to members of the 7 transmembrane domain protein

superfamily

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35

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superfamily

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<400> 41  
acngtntata tnacncatct nacnatngcn ga

32

<210> 42  
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33

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31

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32

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32

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<220>  
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23

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<213> Artificial Sequence

<220>  
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certain odorant receptor protein clones

<400> 50

Lys Ile Val Ser Ser Ile  
1 5

<210> 51  
<211> 6  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Sequence motif found at the N-terminus of the cytoplasmic loop in  
certain odorant receptor protein clones

<400> 51

Arg Ile Val Ser Ser Ile  
1 5

<210> 52  
<211> 6  
<212> PRT  
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<220>  
<223> Sequence motif found at the N-terminus of the cytoplasmic loop in  
certain odorant receptor protein clones

<400> 52

His Ile Thr Cys Ala Val  
1 5

<210> 53  
<211> 6  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Sequence motif found at the N-terminus of the cytoplasmic loop in  
certain odorant receptor protein clones



<400> 53

His Ile Thr Trp Ala Val  
1 5

<210> 54

<211> 19

<212> PRT

<213> Rattus sp.

<400> 54

Leu Ser Lys Glu Asp Cys Ser Gly Phe Ser Asp Val His Cys Gly Tyr  
1 5 10 15

Ser Asp Ala

<210> 55

<211> 9

<212> PRT

<213> Artificial Sequence

<220>

<223> Amino acid sequence for the loop between the first transmembrane domain and the second transmembrane domain, and the second transmembrane domain of an odorant receptor protein

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<222> (7)..(7)

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Leu Xaa Xaa Pro Met Tyr Xaa Phe Leu  
1 5

<210> 56

<211> 9

<212> PRT  
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<220>  
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<223> K or M or T

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<400> 56

Leu Xaa Xaa Pro Met Tyr Xaa Phe Leu  
1 5

<210> 57  
<211> 10  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Amino acid sequence for the third transmembrane domain, and the loop between the third transmembrane domain and the fourth transmembrane domain of an odorant receptor protein

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<220>  
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<223> x = any

<400> 57

Met Xaa Tyr Asp Arg Xaa Xaa Ala Ile Cys  
1 5 10

<210> 58

<211> 10

<212> PRT

<213> Artificial Sequence

<220>

<223> Amino acid sequence for the third transmembrane domain, and the loop between the third transmembrane domain and the fourth transmembrane domain of an odorant receptor protein

<220>

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<222> (2)..(2)

<223> A or S

<220>

<221> MISC\_FEATURE

<222> (6)..(6)

<223> F or Y

<220>

<221> MISC\_FEATURE

<222> (7)..(7)

<223> L or V

<400> 58

Met Xaa Tyr Asp Ala Xaa Xaa Ala Ile Cys  
1 5 10

<210> 59

<211> 7

<212> PRT

<213> Artificial Sequence

<220>

<223> Amino acid sequence for the third transmembrane domain, and the loop between the third transmembrane domain and the fourth transmembrane domain of an odorant receptor protein

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Asp Arg Xaa Xaa Ala Ile Cys  
1 5

<210> 60  
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<212> PRT  
<213> Artificial Sequence

<220>  
<223> Amino acid sequence for the third transmembrane domain, and the loop between the third transmembrane domain and the fourth transmembrane domain of an odorant receptor protein

<220>  
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<223> F or Y

<220>  
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<223> L or V

<400> 60

Asp Arg Xaa Xaa Ala Ile Cys  
1 5

<210> 61  
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<220>  
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<220>  
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<220>  
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Xaa Xaa Phe Ser Thr Cys Xaa Ser His  
1 5

<210> 62  
<211> 9  
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<220>  
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<223> K or R

<220>  
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<223> A or G or S

<400> 62

Xaa Xaa Phe Ser Thr Cys Xaa Ser His  
1 5

<210> 63  
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<220>  
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<400> 63

Phe Ser Thr Cys Xaa Ser His  
1 5

<210> 64  
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<220>  
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<220>  
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<400> 64

Phe Ser Thr Cys Xaa Ser His  
1 5

<210> 65  
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<220>  
<223> Amino acid sequence for the seventh transmembrane domain and the C-terminal domain of an odorant receptor protein

<220>  
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<220>  
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<400> 65

Pro Xaa Xaa Asn Pro Xaa Ile Tyr Xaa Leu Arg Asn  
1 5 10

<210> 66  
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<220>  
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<220>  
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<222> (2)..(2)  
<223> M or L or V

<220>  
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<223> F or L or V

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<223> F or I

<220>  
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<223> C or S or T

<400> 66

Pro Xaa Xaa Asn Pro Xaa Ile Tyr Xaa Leu Arg Asn  
1 5 10

<210> 67  
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<220>  
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<400> 67

Pro Xaa Xaa Asn Pro Xaa Ile Tyr  
1 5

<210> 68  
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<220>  
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<220>  
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<223> F or !

<400> 68

Pro Xaa Xaa Asn Pro Xaa Ile Tyr  
1 5

<210> 69  
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<212> PRT  
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<220>  
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<222> (6)..(6)  
<223> x = any

<400> 69

Asn Pro Xaa Ile Tyr Xaa Leu Arg Asn  
1 5

<210> 70  
<211> 9  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Amino acid sequence for the seventh transmembrane domain and the C-terminal domain of an odorant receptor protein

<220>  
<221> MISC\_FEATURE  
<222> (3)..(3)  
<223> F or I

<220>  
<221> MISC\_FEATURE

<222> (6)..(6)  
<223> C or S or T

<400> 70

Asn Pro Xaa Ile Tyr Xaa Leu Arg Asn  
1 5

<210> 71  
<211> 333  
<212> PRT  
<213> Rattus sp.

<400> 71

Met Asp Ser Ser Asn Arg Thr Arg Val Ser Glu Phe Leu Leu Leu Gly  
1 5 10 15

Phe Val Glu Asn Lys Asp Leu Gln Pro Leu Ile Tyr Gly Leu Phe Leu  
20 25 30

Ser Met Tyr Leu Val Thr Val Ile Gly Asn Ile Ser Ile Ile Val Ala  
35 40 45

Ile Ile Ser Asp Pro Cys Leu His Thr Pro Met Tyr Phe Phe Leu Ser  
50 55 60

Asn Leu Ser Phe Val Asp Ile Cys Phe Ile Ser Thr Thr Val Pro Lys  
65 70 75 80

Met Leu Val Asn Ile Gln Thr Gln Asn Asn Val Ile Thr Tyr Ala Gly  
85 90 95

Cys Ile Thr Gln Ile Tyr Phe Phe Leu Leu Phe Cys Glu Leu Asp Asn  
100 105 110

Phe Leu Leu Thr Ile Met Ala Tyr Asp Arg Tyr Val Ala Ile Cys His  
115 120 125

Pro Met His Tyr Thr Val Ile Met Asn Tyr Lys Leu Cys Gly Phe Leu  
130 135 140

Val Leu Val Ser Trp Ile Val Ser Val Leu His Ala Leu Phe Gln Ser  
145 150 155 160

Leu Met Met Leu Ala Leu Pro Phe Cys Thr His Leu Glu Ile Pro His  
165 170 175

Tyr Phe Cys Glu Pro Asn Gln Val Ile Gln Leu Thr Cys Ser Asp Ala  
180 185 190

Phe Leu Asn Asp Leu Val Ile Tyr Phe Thr Leu Val Leu Leu Ala Thr  
195 200 205

Val Pro Leu Ala Gly Ile Phe Tyr Ser Tyr Phe Lys Ile Val Ser Ser  
210 215 220

Ile Cys Ala Ile Ser Ser Val His Gly Lys Tyr Lys Ala Phe Ser Thr  
225 230 235 240

Cys Ala Ser His Leu Ser Val Val Ser Leu Phe Tyr Cys Thr Gly Leu  
245 250 255

Gly Val Tyr Leu Ser Ser Ala Ala Asn Asn Ser Ser Gln Ala Ser Ala  
260 265 270

Thr Ala Ser Val Met Tyr Thr Val Val Thr Pro Met Val Asn Pro Phe  
275 280 285

Ile Tyr Ser Leu Arg Asn Lys Asp Val Lys Ser Val Leu Lys Lys Thr  
290 295 300

Leu Cys Glu Glu Val Ile Arg Ser Pro Pro Ser Leu Leu His Phe Phe  
305 310 315 320

Leu Val Leu Cys His Leu Pro Cys Phe Ile Phe Cys Tyr  
325 330

<210> 72  
<211> 313  
<212> PRT  
<213> Rattus sp.

<400> 72

Met Ser Ser Thr Asn Gln Ser Ser Val Thr Glu Phe Leu Leu Leu Gly  
1 5 10 15

Leu Ser Arg Gln Pro Gln Gln Gln Gln Leu Leu Phe Leu Leu Phe Leu  
20 25 30

Ile Met Tyr Leu Ala Thr Val Leu Gly Asn Leu Leu Ile Ile Leu Ala  
35 40 45

Ile Gly Thr Asp Ser Arg Leu His Thr Pro Met Tyr Phe Phe Leu Ser  
50 55 60

Asn Leu Ser Phe Val Asp Val Cys Phe Ser Ser Thr Thr Val Pro Lys  
65 70 75 80

Val Leu Ala Asn His Ile Leu Gly Ser Gln Ala Ile Ser Phe Ser Gly  
85 90 95

Cys Leu Thr Gln Leu Tyr Phe Leu Ala Val Phe Gly Asn Met Asp Asn  
100 105 110

Phe Leu Leu Ala Val Met Ser Tyr Asp Arg Phe Val Ala Ile Cys His  
115 120 125

Pro Leu His Tyr Thr Thr Lys Met Thr Arg Gln Leu Cys Val Leu Leu  
130 135 140

Val Val Gly Ser Trp Val Val Ala Asn Met Asn Cys Leu Leu His Ile  
145 150 155 160

Leu Leu Met Ala Arg Leu Ser Phe Cys Ala Ser Asn Met Ile Pro His  
165 170 175

Phe Phe Cys Asp Gly Thr Pro Leu Leu Lys Leu Ser Cys Ser Asp Thr  
180 185 190

His Leu Asn Glu Leu Met Ile Leu Thr Glu Gly Ala Val Val Met Val  
195 200 205

Thr Pro Phe Val Cys Ile Leu Ile Ser Tyr Ile His Ile Thr Cys Ala  
210 215 220

Val Leu Arg Val Ser Ser Pro Arg Gly Gly Trp Lys Ser Phe Ser Thr  
225 230 235 240

Cys Gly Ser His Leu Ala Val Val Cys Leu Phe Tyr Gly Thr Val Ile  
245 250 255

Ala Val Tyr Phe Asn Pro Ser Ser Ser His Leu Ala Gly Arg Asp Met  
260 265 270

Ala Ala Ala Val Met Tyr Ala Val Val Thr Pro Met Leu Asn Pro Phe  
275 280 285

Ile Tyr Ser Leu Arg Asn Ser Asp Met Lys Ala Ala Leu Arg Lys Val  
290 295 300

Leu Ala Met Arg Phe Pro Ser Lys Gln  
305 310

<210> 73  
<211> 311  
<212> PRT  
<213> Rattus sp.

<400> 73

Met Ala Trp Ser Thr Gly Gln Asn Leu Ser Thr Pro Gly Pro Phe Ile  
1 5 10 15

Leu Leu Gly Phe Pro Gly Pro Arg Ser Met Arg Ile Gly Leu Phe Leu  
20 25 30

Leu Phe Leu Val Met Tyr Leu Leu Thr Val Val Gly Asn Leu Ala Ile  
35 40 45

Ile Ser Leu Val Gly Ala His Arg Cys Leu Gln Thr Pro Met Tyr Phe  
50 55 60

Phe Leu Cys Asn Leu Ser Phe Leu Glu Ile Trp Phe Thr Thr Ala Cys  
65 70 75 80

Val Pro Lys Thr Leu Ala Thr Phe Ala Pro Arg Gly Gly Val Ile Ser  
85 90 95

Leu Ala Gly Cys Ala Thr Gln Met Tyr Phe Val Phe Ser Leu Gly Cys  
100 105 110

Thr Glu Tyr Phe Leu Leu Ala Val Met Ala Tyr Asp Arg Tyr Leu Ala  
115 120 125

Ile Cys Leu Pro Leu Arg Tyr Gly Gly Ile Met Thr Pro Gly Leu Ala

130

135

140

Met Arg Leu Ala Leu Gly Ser Trp Leu Cys Gly Phe Ser Ala Ile Thr  
 145 150 155 160

Val Pro Ala Thr Leu Ile Ala Arg Leu Ser Phe Cys Gly Ser Arg Val  
 165 170 175

Ile Asn His Phe Phe Cys Asp Ile Ser Pro Trp Ile Val Leu Ser Cys  
 180 185 190

Thr Asp Thr Gln Val Val Glu Leu Val Ser Phe Gly Ile Ala Phe Cys  
 195 200 205

Val Ile Leu Gly Ser Cys Gly Ile Thr Leu Val Ser Tyr Ala Tyr Ile  
 210 215 220

Ile Thr Thr Ile Ile Lys Ile Pro Ser Ala Arg Gly Arg His Arg Ala  
 225 230 235 240

Phe Ser Thr Cys Ser Ser His Leu Thr Val Val Leu Ile Trp Tyr Gly  
 245 250 255

Ser Thr Ile Phe Leu His Val Arg Thr Ser Val Glu Ser Ser Leu Asp  
 260 265 270

Leu Thr Lys Ala Ile Thr Val Leu Asn Thr Ile Val Thr Pro Val Leu  
 275 280 285

Asn Pro Phe Ile Tyr Thr Leu Arg Asn Lys Asp Val Lys Glu Ala Leu  
 290 295 300

Arg Arg Thr Val Lys Gly Lys  
 305 310

<210> 74

<211> 317

<212> PRT

<213> Rattus sp.

<400> 74

Met Glu Ser Gly Asn Ser Thr Arg Arg Phe Ser Ser Phe Phe Leu Leu  
 1 5 10 15

Gly	Phe	Thr	Glu	Asn	Pro	Gln	Leu	His	Phe	Leu	Ile	Phe	Ala	Leu	Phe	20	25	30	
Leu	Ser	Met	Tyr	Leu	Val	Thr	Val	Leu	Gly	Asn	Leu	Leu	Ile	Ile	Met	35	40	45	
Ala	Ile	Ile	Thr	Gln	Ser	His	Leu	His	Thr	Pro	Met	Tyr	Phe	Phe	Leu	50	55	60	
Ala	Asn	Leu	Ser	Phe	Val	Asp	Ile	Cys	Phe	Thr	Ser	Thr	Thr	Ile	Pro	65	70	75	80
Lys	Met	Leu	Val	Asn	Ile	Tyr	Thr	Gln	Ser	Lys	Ser	Ile	Thr	Tyr	Glu	85	90	95	
Asp	Cys	Ile	Ser	Gln	Met	Cys	Val	Phe	Leu	Val	Phe	Ala	Glu	Leu	Gly	100	105	110	
Asn	Phe	Leu	Leu	Ala	Val	Met	Ala	Tyr	Asp	Arg	Tyr	Val	Ala	Asn	Cys	115	120	125	
His	Pro	Leu	Cys	Tyr	Thr	Val	Ile	Val	Asn	His	Arg	Leu	Cys	Ile	Leu	130	135	140	
Leu	Leu	Leu	Leu	Ser	Trp	Val	Ile	Ser	Ile	Phe	His	Ala	Phe	Ile	Gln	145	150	155	160
Ser	Leu	Ile	Val	Leu	Gln	Leu	Thr	Phe	Cys	Gly	Asp	Val	Lys	Ile	Pro	165	170	175	
His	Phe	Phe	Cys	Glu	Leu	Asn	Gln	Leu	Ser	Gln	Leu	Thr	Cys	Ser	Asp	180	185	190	
Asn	Phe	Pro	Ser	His	Leu	Ile	Met	Asn	Leu	Val	Pro	Val	Met	Leu	Ala	195	200	205	
Ala	Ile	Ser	Phe	Ser	Gly	Ile	Leu	Tyr	Ser	Tyr	Phe	Lys	Ile	Val	Ser	210	215	220	
Ser	Ile	His	Ser	Ile	Ser	Thr	Val	Gln	Gly	Lys	Tyr	Lys	Ala	Phe	Ser	225	230	235	240

Thr Cys Ala Ser His Leu Ser Ile Val Ser Leu Phe Tyr Ser Thr Gly  
245 250 255

Leu Gly Val Tyr Val Ser Ser Ala Val Val Gln Ser Ser His Ser Ala  
260 265 270

Ala Ser Ala Ser Val Met Tyr Thr Val Val Thr Pro Met Leu Asn Pro  
275 280 285

Phe Ile Tyr Ser Leu Arg Asn Lys Asp Val Lys Arg Ala Leu Glu Arg  
290 295 300

Leu Leu Glu Gly Asn Cys Lys Val His His Trp Thr Gly  
305 310 315

<210> 75  
<211> 310  
<212> PRT  
<213> Rattus sp.

<400> 75

Met Asn Asn Gln Thr Phe Ile Thr Gln Phe Leu Leu Leu Gly Leu Pro  
1 5 10 15

Ile Pro Glu Glu His Gln His Leu Phe Tyr Ala Leu Phe Leu Val Met  
20 25 30

Tyr Leu Thr Thr Ile Leu Gly Asn Leu Leu Ile Ile Val Leu Val Gln  
35 40 45

Leu Asp Ser Gln Leu His Thr Pro Met Tyr Leu Phe Leu Ser Asn Leu  
50 55 60

Ser Phe Ser Asp Leu Cys Phe Ser Ser Val Thr Met Pro Lys Leu Leu  
65 70 75 80

Gln Asn Met Arg Ser Gln Asp Thr Ser Ile Pro Tyr Gly Gly Cys Leu  
85 90 95

Ala Gln Thr Tyr Phe Phe Met Val Phe Gly Asp Met Glu Ser Phe Leu  
100 105 110

Leu Val Ala Met Ala Tyr Asp Arg Tyr Val Ala Ile Cys Phe Pro Leu  
115 120 125



His Tyr Thr Ser Ile Met Ser Pro Lys Leu Cys Thr Cys Leu Val Leu  
130 135 140

Leu Leu Trp Met Leu Thr Thr Ser His Ala Met Met His Thr Leu Leu  
145 150 155 160

Ala Ala Arg Leu Ser Phe Cys Glu Asn Asn Val Val Leu Asn Phe Phe  
165 170 175

Cys Asp Leu Phe Val Leu Leu Lys Leu Ala Cys Ser Asp Thr Tyr Ile  
180 185 190

Asn Glu Leu Met Ile Phe Ile Met Ser Thr Leu Leu Ile Ile Ile Pro  
195 200 205

Phe Phe Leu Ile Val Met Ser Tyr Ala Arg Ile Ile Ser Ser Ile Leu  
210 215 220

Lys Val Pro Ser Thr Gln Gly Ile Cys Leu Val Phe Ser Thr Cys Gly  
225 230 235 240

Ser His Leu Ser Val Val Ser Leu Phe Tyr Gly Thr Ile Ile Gly Leu  
245 250 255

Tyr Leu Cys Pro Ala Gly Asn Asn Ser Thr Val Lys Glu Met Val Met  
260 265 270

Ala Met Met Tyr Thr Val Val Thr Pro Met Leu Asn Pro Phe Ile Tyr  
275 280 285

Ser Leu Arg Asn Arg Asp Met Lys Arg Ala Leu Ile Arg Val Ile Cys  
290 295 300

Ser Met Lys Ile Thr Leu  
305 310

<210> 76  
<211> 327  
<212> PRT  
<213> Rattus sp.

<400> 76

Met Glu Arg Arg Asn His Ser Gly Arg Val Ser Glu Phe Val Leu Leu  
1 5 10 15

Gly Phe Pro Ala Pro Ala Pro Leu Arg Val Leu Leu Phe Phe Leu Ser  
20 25 30

Leu Leu Asp Tyr Val Leu Val Leu Thr Glu Asn Met Leu Ile Ile Ile  
35 40 45

Ala Ile Arg Asn His Pro Thr Leu His Lys Pro Met Tyr Phe Phe Leu  
50 55 60

Ala Asn Met Ser Phe Leu Glu Ile Trp Tyr Val Thr Val Thr Ile Pro  
65 70 75 80

Lys Met Leu Ala Gly Phe Ile Gly Ser Lys Glu Asn His Gly Gln Leu  
85 90 95

Ile Ser Phe Glu Ala Cys Met Thr Gln Leu Tyr Phe Phe Leu Gly Leu  
100 105 110

Gly Cys Thr Glu Cys Val Leu Leu Ala Val Met Ala Tyr Asp Arg Tyr  
115 120 125

Val Ala Ile Cys His Pro Leu His Tyr Pro Val Ile Val Ser Ser Arg  
130 135 140

Leu Cys Val Gln Met Ala Ala Gly Ser Trp Ala Gly Gly Phe Gly Ile  
145 150 155 160

Ser Met Val Lys Val Phe Leu Ile Ser Arg Leu Ser Tyr Cys Gly Pro  
165 170 175

Asn Thr Ile Asn His Phe Phe Cys Asp Val Ser Pro Leu Leu Asn Leu  
180 185 190

Ser Cys Thr Asp Met Ser Thr Ala Glu Leu Thr Asp Phe Val Leu Ala  
195 200 205

Ile Phe Ile Leu Leu Gly Pro Leu Ser Val Thr Gly Ala Ser Tyr Met  
210 215 220

Ala Ile Thr Gly Ala Val Met Arg Ile Pro Ser Ala Ala Gly Arg His

225					230					235					240				
Lys	Ala	Phe	Ser	Thr	Cys	Ala	Ser	His	Leu	Thr	Val	Val	Ile	Ile	Phe				
				245					250					255					
Tyr	Ala	Ala	Ser	Ile	Phe	Ile	Tyr	Ala	Arg	Pro	Lys	Ala	Leu	Ser	Ala				
			260				265						270						
Phe	Asp	Thr	Asn	Lys	Leu	Val	Ser	Val	Leu	Tyr	Ala	Val	Ile	Val	Pro				
		275					280					285							
Leu	Phe	Asn	Pro	Ile	Ile	Tyr	Cys	Leu	Arg	Asn	Gln	Asp	Val	Lys	Arg				
	290					295					300								
Ala	Leu	Arg	Arg	Thr	Leu	His	Leu	Ala	Gln	Asp	Gln	Glu	Ala	Asn	Thr				
305					310					315					320				
Asn	Lys	Gly	Ser	Lys	Ile	Gly													
				325															
<210>	77																		
<211>	312																		
<212>	PRT																		
<213>	Rattus sp.																		
<400>	77																		
Met	Asn	Asn	Lys	Thr	Val	Ile	Thr	His	Phe	Leu	Leu	Leu	Gly	Leu	Pro				
1				5					10					15					
Ile	Pro	Pro	Glu	His	Gln	Gln	Leu	Phe	Phe	Ala	Leu	Phe	Leu	Ile	Met				
			20					25					30						
Tyr	Leu	Thr	Thr	Phe	Leu	Gly	Asn	Leu	Leu	Ile	Val	Val	Leu	Val	Gln				
		35					40					45							
Leu	Asp	Ser	His	Leu	His	Thr	Pro	Met	Tyr	Leu	Pro	Leu	Ser	Asn	Leu				
	50					55					60								
Ser	Phe	Ser	Asp	Leu	Cys	Phe	Ser	Ser	Val	Thr	Met	Leu	Lys	Leu	Leu				
65					70					75					80				
Gln	Asn	Ile	Gln	Ser	Gln	Val	Pro	Ser	Ile	Ser	Tyr	Ala	Gly	Cys	Leu				
				85					90					95					

Thr Gln Ile Phe Phe Phe Leu Leu Phe Gly Tyr Leu Gly Asn Phe Leu  
100 105 110

Leu Val Ala Met Ala Tyr Asp Arg Tyr Val Ala Ile Cys Phe Pro Leu  
115 120 125

His Tyr Thr Asn Ile Met Ser His Lys Leu Cys Thr Cys Leu Leu Leu  
130 135 140

Asn Phe Trp Ile Met Thr Ser Ser His Ala Met Met His Thr Leu Leu  
145 150 155 160

Ala Ala Arg Leu Ser Phe Cys Glu Asn Asn Val Leu Leu Asn Phe Phe  
165 170 175

Cys Asp Leu Phe Val Leu Leu Lys Leu Ala Cys Ser Asp Thr Tyr Val  
180 185 190

Asn Glu Leu Met Ile His Ile Met Gly Val Ile Ile Ile Val Ile Pro  
195 200 205

Phe Val Leu Ile Val Ile Ser Tyr Ala Lys Ile Ile Ser Ser Ile Leu  
210 215 220

Lys Val Pro Ser Thr Gln Ser Ile His Lys Val Phe Ser Thr Cys Gly  
225 230 235 240

Ser His Leu Ser Val Val Ser Leu Phe Tyr Gly Thr Ile Ile Gly Leu  
245 250 255

Tyr Leu Cys Pro Ser Gly Asp Asn Phe Ser Leu Lys Gly Ser Ala Met  
260 265 270

Ala Met Met Tyr Thr Val Val Thr Pro Met Leu Asn Pro Phe Ile Tyr  
275 280 285

Ser Leu Arg Asn Arg Asp Met Lys Gln Ala Leu Ile Arg Val Thr Cys  
290 295 300

Ser Lys Lys Ile Ser Leu Pro Trp  
305 310

<210> 78  
<211> 314  
<212> PRT  
<213> Rattus sp.

<400> 78

Met Thr Arg Arg Asn Gln Thr Ala Ile Ser Gln Phe Phe Leu Leu Gly  
1 5 10 15

Leu Pro Phe Pro Pro Glu Tyr Gln His Leu Phe Tyr Ala Leu Phe Leu  
20 25 30

Ala Met Tyr Leu Thr Thr Leu Leu Gly Asn Leu Ile Ile Ile Ile Leu  
35 40 45

Ile Leu Leu Asp Ser His Leu His Thr Pro Met Tyr Leu Phe Leu Ser  
50 55 60

Asn Leu Ser Phe Ala Asp Leu Cys Phe Ser Ser Val Thr Met Pro Lys  
65 70 75 80

Leu Leu Gln Asn Met Gln Ser Gln Val Pro Ser Ile Pro Tyr Ala Gly  
85 90 95

Cys Leu Ala Gln Ile Tyr Phe Phe Leu Phe Phe Gly Asp Leu Gly Asn  
100 105 110

Phe Leu Leu Val Ala Met Ala Tyr Asp Arg Tyr Val Ala Ile Cys Phe  
115 120 125

Pro Leu His Tyr Met Ser Ile Met Ser Pro Lys Leu Cys Val Ser Leu  
130 135 140

Val Val Leu Ser Trp Val Leu Thr Thr Phe His Ala Met Leu His Thr  
145 150 155 160

Leu Leu Met Ala Arg Leu Ser Phe Cys Glu Asp Ser Val Ile Pro His  
165 170 175

Tyr Phe Cys Asp Met Ser Thr Leu Leu Lys Val Ala Cys Ser Asp Thr  
180 185 190

His Asp Asn Glu Leu Ala Ile Phe Ile Leu Gly Gly Pro Ile Val Val  
195 200 205

Leu Pro Phe Leu Leu Ile Ile Val Ser Tyr Ala Arg Ile Val Ser Ser  
210 215 220

Ile Phe Lys Val Pro Ser Ser Gln Ser Ile His Lys Ala Phe Ser Thr  
225 230 235 240

Cys Gly Ser His Leu Ser Val Val Ser Leu Phe Tyr Gly Thr Val Ile  
245 250 255

Gly Leu Tyr Leu Cys Pro Ser Ala Asn Asn Ser Thr Val Lys Glu Thr  
260 265 270

Val Met Ser Leu Met Tyr Thr Met Val Thr Pro Met Leu Asn Pro Phe  
275 280 285

Ile Tyr Ser Leu Arg Asn Arg Asp Ile Lys Asp Ala Leu Glu Lys Ile  
290 295 300

Met Cys Lys Lys Gln Ile Pro Ser Phe Leu  
305 310

<210> 79  
<211> 312  
<212> PRT  
<213> Rattus sp.

<400> 79

Met Thr Gly Asn Asn Gln Thr Leu Ile Leu Glu Phe Leu Leu Leu Gly  
1 5 10 15

Leu Pro Ile Pro Ser Glu Tyr His Leu Leu Phe Tyr Ala Leu Phe Leu  
20 25 30

Ala Met Tyr Leu Thr Ile Ile Leu Gly Asn Leu Leu Ile Ile Val Leu  
35 40 45

Val Arg Leu Asp Ser His Leu His Met Pro Met Tyr Leu Phe Leu Ser  
50 55 60

Asn Leu Ser Phe Ser Asp Leu Cys Pro Ser Ser Val Thr Met Pro Lys  
65 70 75 80

Leu Leu Gln Asn Met Gln Ser Gln Val Pro Ser Ile Ser Tyr Thr Gly  
85 90 95

Cys Leu Thr Gln Leu Tyr Phe Phe Met Val Phe Gly Asp Met Glu Ser  
100 105 110

Phe Leu Leu Val Val Met Ala Tyr Asp Arg Tyr Val Ala Ile Cys Phe  
115 120 125

Pro Leu Arg Tyr Thr Thr Ile Met Ser Thr Lys Phe Cys Ala Ser Leu  
130 135 140

Val Leu Leu Leu Trp Met Leu Thr Met Thr His Ala Leu Leu His Thr  
145 150 155 160

Leu Leu Ile Ala Arg Leu Ser Phe Cys Glu Lys Asn Val Ile Leu His  
165 170 175

Phe Phe Cys Asp Ile Ser Ala Leu Leu Lys Leu Ser Cys Ser Asp Ile  
180 185 190

Tyr Val Asn Glu Leu Met Ile Tyr Ile Leu Gly Gly Leu Ile Ile Ile  
195 200 205

Ile Pro Phe Leu Leu Ile Val Met Ser Tyr Val Arg Ile Phe Phe Ser  
210 215 220

Ile Leu Lys Phe Pro Ser Ile Gln Asp Ile Tyr Lys Val Phe Ser Thr  
225 230 235 240

Cys Gly Ser His Leu Ser Val Val Thr Leu Phe Tyr Gly Thr Ile Phe  
245 250 255

Gly Ile Tyr Leu Cys Pro Ser Gly Asn Asn Ser Thr Val Lys Glu Ile  
260 265 270

Ala Met Ala Met Met Tyr Thr Val Val Thr Pro Met Leu Asn Pro Phe  
275 280 285

Ile Tyr Ser Leu Arg Asn Arg Asp Met Lys Arg Ala Leu Ile Arg Val  
290 295 300

Ile Cys Thr Lys Lys Ile Ser Leu

305

310

&lt;210&gt; 80

&lt;211&gt; 314

&lt;212&gt; PRT

&lt;213&gt; Rattus sp.

&lt;400&gt; 80

Met Thr Glu Glu Asn Gln Thr Val Ile Ser Gln Phe Leu Leu Leu Phe  
 1 5 10 15

Leu Pro Ile Pro Ser Glu His Gln His Val Phe Tyr Ala Leu Phe Leu  
 20 25 30

Ser Met Tyr Leu Thr Thr Val Leu Gly Asn Leu Ile Ile Ile Leu  
 35 40 45

Ile His Leu Ala Ser His Leu His Thr Pro Met Tyr Leu Phe Leu Ser  
 50 55 60

Asn Leu Ser Phe Ser Asp Leu Cys Phe Ser Ser Val Thr Met Pro Lys  
 65 70 75 80

Leu Leu Gln Asn Met Gln Ser Gln Val Pro Ser Ile Pro Phe Ala Gly  
 85 90 95

Cys Leu Thr Gln Leu Tyr Phe Tyr Leu Tyr Phe Ala Asp Leu Glu Ser  
 100 105 110

Phe Leu Leu Val Ala Met Ala Tyr Asp Arg Tyr Val Ala Ile Cys Phe  
 115 120 125

Pro Leu His Tyr Met Ser Ile Met Ser Pro Tyr Leu Cys Val Ser Leu  
 130 135 140

Val Val Leu Ser Trp Val Leu Thr Thr Phe His Ala Met Leu His Thr  
 145 150 155 160

Leu Leu Met Ala Arg Leu Ser Phe Cys Ala Asp Asn Met Ile Pro His  
 165 170 175

Phe Phe Cys Asp Ile Ser Pro Leu Leu Lys Leu Ser Cys Ser Asp Thr  
 180 185 190

C1  
Cont



His Val Asn Glu Leu Val Ile Phe Val Met Gly Gly Leu Val Ile Val  
195 200 205

Ile Pro Phe Val Leu Ile Ile Val Ser Tyr Ala Arg Val Val Ala Ser  
210 215 220

Ile Leu Lys Val Pro Ser Val Arg Gly Ile His Lys Ile Phe Ser Thr  
225 230 235 240

Cys Gly Ser His Leu Ser Val Val Ser Leu Phe Tyr Gly Thr Ile Ile  
245 250 255

Gly Leu Tyr Leu Cys Pro Ser Ala Asn Asn Ser Thr Val Lys Glu Thr  
260 265 270

Val Met Ala Met Met Tyr Thr Val Val Thr Pro Met Leu Asn Pro Phe  
275 280 285

Ile Tyr Ser Leu Arg Asn Arg Asp Met Lys Glu Ala Leu Ile Arg Val  
290 295 300

Leu Cys Lys Lys Lys Ile Thr Phe Cys Leu  
305 310

<210> 81  
<211> 44  
<212> PRT  
<213> Rattus sp.

<400> 81

Arg Val Asn Glu Val Val Ile Phe Ile Val Val Ser Leu Phe Leu Val  
1 5 10 15

Leu Pro Phe Ala Leu Ile Ile Met Ser Tyr Val Arg Ile Val Ser Ser  
20 25 30

Ile Leu Lys Val Pro Ser Ser Gln Gly Ile Tyr Lys  
35 40

<210> 82  
<211> 44  
<212> PRT  
<213> Rattus sp.

C!  
Cont

<400> 82

Phe Leu Asn Asp Leu Val Ile Tyr Phe Thr Leu Val Leu Leu Ala Thr  
1 5 10 15

Val Pro Leu Ala Gly Ile Phe Tyr Ser Tyr Phe Lys Ile Val Ser Ser  
20 25 30

Ile Cys Ala Ile Ser Ser Val His Gly Lys Tyr Lys  
35 40

<210> 83

<211> 44

<212> PRT

<213> Rattus sp.

<400> 83

His Leu Asn Glu Leu Met Ile Leu Thr Glu Gly Ala Val Val Met Thr  
1 5 10 15

Pro Phe Val Cys Ile Leu Ile Ser Tyr Ile His Ile Thr Cys Ala Val  
20 25 30

Val Leu Arg Val Ser Ser Pro Arg Gly Gly Trp Lys  
35 40

<210> 84

<211> 44

<212> PRT

<213> Rattus sp.

<400> 84

Gln Val Val Glu Leu Val Ser Phe Gly Ile Ala Phe Cys Val Ile His  
1 5 10 15

Gly Ser Cys Gly Ile Thr Leu Val Ser Tyr Ala Tyr Ile Ile Thr Thr  
20 25 30

Ile Ile Lys Ile Pro Ser Ala Arg Gly Arg His Arg  
35 40

<210> 85

<211> 44

<212> PRT

<213> Rattus sp.

C1  
Cmt

<400> 85

His Val Asn Glu Leu Val Ile Phe Val Met Gly Gly Ile Ile Leu Val  
1 5 10 15

Ile Pro Phe Val Leu Ile Ile Val Ser Tyr Val Arg Ile Val Ser Ser  
20 25 30

Ile Leu Lys Val Pro Ser Ala Arg Gly Ile Arg Lys  
35 40

<210> 86

<211> 44

<212> PRT

<213> Rattus sp.

<400> 86

Phe Pro Ser His Leu Thr Met His Leu Val Pro Val Ile Leu Ala Ala  
1 5 10 15

Ile Ser Leu Ser Gly Ile Leu Tyr Ser Tyr Phe Lys Ile Val Ser Ser  
20 25 30

Ile Arg Ser Met Ser Ser Val Gln Gly Lys Tyr Lys  
35 40

<210> 87

<211> 44

<212> PRT

<213> Rattus sp.

<400> 87

Phe Pro Ser His Leu Ile Met Asn Leu Val Pro Val Met Leu Ala Ala  
1 5 10 15

Ile Ser Phe Ser Gly Ile Leu Tyr Ser Tyr Phe Lys Ile Val Ser Ser  
20 25 30

Ile His Ser Ile Ser Thr Val Gln Gly Lys Tyr Lys  
35 40

<210> 88

<211> 44

<212> PRT

<213> Rattus sp.

C!  
Cont

<400> 88

Phe Pro Ser His Leu Ile Met Asn Leu Val Pro Val Met Leu Ala Ala  
1 5 10 15

Ile Ser Phe Ser Gly Ile Leu Tyr Ser Tyr Phe Lys Ile Val Ser Ser  
20 25 30

Ile Arg Ser Val Ser Ser Val Lys Gly Lys Tyr Lys  
35 40

<210> 89

<211> 44

<212> PRT

<213> Rattus sp.

<400> 89

Phe Leu Asn Asp Val Ile Met Tyr Phe Ala Leu Val Leu Leu Ala Val  
1 5 10 15

Val Pro Leu Leu Gly Ile Leu Tyr Ser Tyr Ser Lys Ile Val Ser Ser  
20 25 30

Ile Arg Ala Ile Ser Thr Val Gln Gly Lys Tyr Lys  
35 40

<210> 90

<211> 44

<212> PRT

<213> Rattus sp.

<400> 90

His Glu Ile Glu Met Ile Ile Leu Val Leu Ala Ala Phe Asn Leu Ile  
1 5 10 15

Ser Ser Leu Leu Val Val Leu Val Ser Tyr Leu Phe Ile Leu Ile Ala  
20 25 30

Ile Leu Arg Met Asn Ser Ala Glu Gly Arg Arg Lys  
35 40

<210> 91

<211> 44

<212> PRT

<213> Rattus sp.

C1  
Cont

<400> 91

Tyr Ile Asn Glu Leu Met Ile Phe Ile Met Ser Thr Leu Leu Ile Ile  
1 5 10 15

Ile Pro Phe Phe Leu Ile Val Met Ser Tyr Ala Arg Ile Ile Ser Ser  
20 25 30

Ile Leu Lys Val Pro Ser Thr Gln Gly Ile Cys Lys  
35 40

<210> 92

<211> 44

<212> PRT

<213> Rattus sp.

<400> 92

Ser Thr Ala Glu Leu Thr Asp Phe Val Leu Ala Ile Phe Ile Leu Leu  
1 5 10 15

Gly Pro Leu Ser Val Thr Gly Ala Ser Tyr Met Ala Ile Thr Gly Ala  
20 25 30

Val Met Arg Ile Pro Ser Ala Ala Gly Arg His Lys  
35 40

<210> 93

<211> 44

<212> PRT

<213> Rattus sp.

<400> 93

Tyr Val Asn Glu Leu Met Ile His Ile Met Gly Val Ile Ile Ile Val  
1 5 10 15

Ile Pro Phe Val Leu Ile Val Ile Ser Tyr Ala Lys Ile Ile Ser Ser  
20 25 30

Ile Leu Lys Val Pro Ser Thr Gln Ser Ile His Lys  
35 40

<210> 94

<211> 44

<212> PRT

<213> Rattus sp.

C1  
Cont

<400> 94

His Asp Asn Glu Leu Ala Ile Phe Ile Leu Gly Gly Pro Ile Val Val  
1 5 10 15

Leu Pro Phe Leu Leu Ile Ile Val Ser Tyr Ala Arg Ile Val Ser Ser  
20 25 30

Ile Phe Lys Val Pro Ser Ser Gln Ser Ile His Lys  
35 40

<210> 95

<211> 44

<212> PRT

<213> Rattus sp.

<400> 95

His Leu Asn Glu Leu Met Ile Leu Thr Glu Gly Ala Val Val Met Val  
1 5 10 15

Thr Pro Phe Val Cys Ile Leu Ile Ser Tyr Ile His Ile Thr Trp Ala  
20 25 30

Val Leu Arg Val Ser Ser Pro Arg Gly Gly Trp Lys  
35 40

<210> 96

<211> 44

<212> PRT

<213> Rattus sp.

<400> 96

Phe Pro Ser His Leu Ile Met Asn Leu Val Pro Val Met Leu Gly Ala  
1 5 10 15

Ile Ser Leu Ser Gly Ile Leu Tyr Ser Tyr Phe Lys Ile Val Ser Ser  
20 25 30

Val Arg Ser Ile Ser Ser Val Gln Gly Lys His Lys  
35 40

<210> 97

<211> 44

<212> PRT

<213> Rattus sp.

C1  
Cmt

<400> 97

Tyr Val Asn Glu Leu Met Ile Tyr Ile Leu Gly Gly Leu Ile Ile Ile  
1 5 10 15

Ile Pro Phe Leu Leu Ile Val Met Ser Tyr Val Arg Ile Phe Phe Ser  
20 25 30

Ile Leu Lys Phe Pro Ser Ile Glx Asp Ile Tyr Lys  
35 40

<210> 98

<211> 44

<212> PRT

<213> Rattus sp.

<400> 98

His Val Asn Glu Leu Val Ile Phe Val Met Gly Gly Leu Val Ile Val  
1 5 10 15

Ile Pro Phe Val Leu Ile Ile Val Ser Tyr Ala Arg Val Val Ala Ser  
20 25 30

Ile Leu Lys Val Pro Ser Val Arg Gly Ile His Lys  
35 40

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